

VERSION SHOWING THE AMENDMENTS TO THE CLAIMS.RECEIVED
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This listing replaces any prior listing of the claims.

Claims:

1. (Previously amended) A magnetically actuable apparatus for a control system comprising:

a sensor mountable to a first support member, said sensor having a contact that is movable between an open electrical state and a closed electrical state in the presence of magnetic flux, and

a magnetic actuator for actuating the contact, said magnetic actuator being mountable to a second support member that is displaceable relative to the first support member, wherein said magnetic actuator has a lateral side and an elongated magnetic field of like polarity extending along the lateral side to form an effective region of magnetic flux having a magnitude and direction that is greater than a magnetic field for a given magnet, wherein the effective region of magnetic flux allows the first support member to be displaced relative to the second support member a magnitude and direction in excess of the magnitude and direction of displacement obtainable using the given magnet, without a change in the electrical state of the contact.

2. (Previously amended) The apparatus as recited in claim 1, wherein the sensor comprises first and second reeds that electrically control the flow of current to the system.

3. (Previously amended) The apparatus as recited in claim 1, wherein the magnetic actuator comprises a plurality of spaced apart, alike aligned magnetic fields arranged adjacent to one another along the second support member, wherein each of the

plurality of magnetic fields has a pole of polarity that overlaps with a like pole of polarity of an adjacent magnet to further define the effective region of magnetic flux.

4. (Previously amended) The apparatus as recited in claim 1, wherein the magnetic actuator comprises an elongated magnet having opposing north and south magnetic components that extend laterally on opposite sides of the magnetic actuator relative to one another.

5. (Original) The apparatus as recited in claim 4, wherein the effective region of magnetic flux has a magnitude and direction that duplicates at least two aligned, alike magnetic fields that are arranged with overlapping like magnetic fields.

6. (Previously amended) The apparatus as recited in claim 1, wherein the sensor is a reed switch having a first contact member and a second contact member, wherein at least one of the aforesaid contact members defines an axis that is arranged transverse to the effective region of magnetic flux.

7. (Previously amended) The apparatus as recited in claim 6, wherein the first contact member is displaceable relative to the second contact member to open and to close the switch.

8. (Currently amended) The apparatus as recited in claim 7, wherein the first and second contact members are contact is in the an open electrical state in the presence of the effective region of magnetic flux.

9. (Currently amended) The apparatus as recited in claim ~~8~~ 7, wherein the first and second contact members are contact is in the a closed electrical state in the presence of the effective region of magnetic flux.

10. (Previously amended) The apparatus as recited in claim 1, wherein the magnetic actuator allows the first support member to be displaced relative to the second support member in excess of about one inch without a change in the electrical state of the sensor.

11. (Currently amended) The apparatus as recited in claim 8, wherein the system is an alarm that is settable when the first and second contact members are ~~contact~~ is in the open ~~closed~~ state.

12. (Currently amended) The apparatus as recited in claim 9 ~~7~~, wherein the system is an alarm that is ~~not~~-settable when the first and second contact members are ~~contact~~ is in the closed ~~open~~-state.

13. (Previously amended) The apparatus as recited in claim 8, wherein the reed switch is oriented normal to the magnetic actuator.

14. (Previously amended) A magnetically actuated apparatus for use with an electrically operated control system, said apparatus comprising:

an electrically operated sensor mountable to a first support member that is adapted to move relative to a second support member, said sensor including a contact that moves intermediate an open condition and a closed condition in response to magnetic flux to operate the sensor, and

a magnetic actuator mountable to the second support member for actuating the sensor, said magnetic actuator having a lateral side and an elongated magnetic field of like polarity extending along the lateral side to form an effective region of magnetic flux of a first magnitude and a first direction in excess of a region of magnetic flux of a given magnet having a second magnitude and a second direction,

wherein the effective region of magnetic flux is aligned normal to the magnetic actuator to allow the first support member to move relative to the second support member a greater distance than obtainable using the region of magnetic flux of the given magnet, without a change in the condition of the sensor.

15. (Original) The apparatus as recited in claim 14, wherein the control system is an alarm system.

16. (Original) The apparatus as recited in claim 15, wherein the control system is a physical monitoring system.

17. (Currently amended) The apparatus as recited in claim 14, wherein the magnetic actuator comprises an assembly of aligned, alike magnetic fields having opposed magnetic fields of opposite polarity of a given magnitude, wherein like magnetic fields of each magnet overlap to further define the effective region of magnetic flux.

18. (Original) The apparatus as recited in claim 14, wherein the magnetic actuator comprises an elongated magnet having a longitudinal axis, opposed sides and an elongated magnetic field of like polarity extending laterally along said longitudinal axis intermediate the opposed sides, wherein said elongated magnetic field duplicates overlapping magnetic fields of alike magnets to further define the effective region of magnetic flux.

19. (Previously amended) The apparatus as recited in claim 14, wherein the sensor includes a first contact member and a second contact member adapted to move relative to the first contact member in the presence of magnetic flux to control the flow of electric current to the control system.

20. (Previously amended) A magnetically operated apparatus for use with an electrically operated system, the apparatus comprising:

a sensor mountable to a first support structure that is adapted to move relative to a second support structure, the sensor including a first contact member that is adapted to move relative to a second contact member in the presence of magnetic flux to open and close a circuit electrically connected to the system, and

a magnetic assembly adapted to operatively interact with the sensor, the magnetic assembly being mountable to a second support member and having an elongated magnetic field of like polarity that is aligned traverse to said first contact member, said elongated magnetic field defining an effective region of magnetic flux to actuate the sensor, said effective region of magnetic flux having a given magnitude and a given direction that is in excess of the magnetic flux of a given magnet,

wherein the effective region of magnetic flux allows the first support member to move relative to the second support member a distance having a magnitude that is greater than the magnitude that is obtained using the given magnet.

Claims 21-22 (Canceled without prejudice)

23. (Currently amended) A magnetically actuated apparatus for opening and closing an electric circuit, the apparatus being adapted for use with first and second support members arranged for displacement relative to one another, wherein the apparatus comprises:

a sensor connected to the electric circuit having an open and a closed state, the sensor being mountable to the first support member and comprising a first contact member arranged for displacement relative to a second contact member.

a magnetic actuator mountable to the second support member, the magnetic actuator comprising a plurality of alike, aligned magnetic fields, each magnetic field having a pole of opposite polarity and a region of magnetic flux of a first magnitude in a given direction,

wherein like poles of the plurality of magnetic fields are arranged adjacent to one another to provide an effective magnetic flux region of a second magnitude that is greater than the first magnitude in a given direction of any one of said plurality of magnetic fields, the effective magnetic flux region being used to displace one of said contact members,

wherein the plurality of magnetic fields is formed by at least a pair of alike magnetic fields, each magnetic field having a north pole and a south pole oriented with like poles aligned with one another,

whereby the effective magnetic flux region allows the first and second support members to be displaced relative to one another in a given direction for a given magnitude, that is greater than the displacement obtainable by the first and second members using the magnetic flux of any one of the magnet fields, without a change in the electric condition of the sensor.

~~The apparatus as recited in claim 21, wherein the plurality of magnetic fields is formed by a pair of alike magnetic fields, each magnetic field having a north pole and a south pole and is oriented with like poles aligned with one another.~~

24. (Currently amended) A magnetically actuated apparatus for opening and closing an electric circuit, the apparatus being adapted for use with first and second support members arranged for displacement relative to one another, wherein the apparatus comprises:

a sensor connected to the electric circuit having an open and a closed state, the sensor being mountable to the first support member and comprising a first contact member arranged for displacement relative to a second contact member,

a magnetic actuator mountable to the second support member, the magnetic actuator comprising a plurality of alike, aligned magnetic fields, each magnetic field having a pole of opposite polarity and a region of magnetic flux of a first magnitude in a given direction,

wherein like poles of the plurality of magnetic fields are arranged adjacent to one another to provide an effective magnetic flux region of a second magnitude that is greater than the first magnitude in a given direction of any one of said plurality of magnetic fields, the effective magnetic flux region being used to displace one of said contact members,

wherein each of the alike, aligned magnetic fields has a north pole, a south pole and a longitudinal axis extending along each of the north and south poles that is normal to an axis defined by at least one of said contact members,

whereby the effective magnetic flux region allows the first and second support members to be displaced relative to one another in a given direction for a given magnitude, that is greater than the displacement obtainable by the first and second members using the magnetic flux of any one of the magnet fields, without a change in the electric condition of the sensor.

~~The apparatus as recited in claim 23, wherein each of the alike magnetic fields has a longitudinal axis extending about the north and south poles, that is normal to an axis defined by at least one of said contact members.~~

25. (Currently Amended) The apparatus as recited in claim 24 23, wherein the electric circuit is connected to a security monitoring system.

Claims 26-33 (Canceled without prejudice)

34. (Currently amended) A magnetically actuated apparatus for opening and closing an electric circuit, the apparatus being adapted for use with first and second support members arranged for displacement relative to one another, wherein the apparatus comprises:

a sensor connected to the electric circuit having an open and a closed state, the sensor being mountable to the first support member and comprising a first contact member arranged for displacement relative to a second contact member,

a magnetic actuator mountable to the second support member, the magnetic actuator comprising a plurality of alike, aligned magnetic fields for selectively displacing one of said contact members, each magnetic field having a pole of opposite polarity and a region of magnetic flux of a first magnitude in a given direction wherein like poles of the plurality of magnetic fields are arranged adjacent to one another to provide an effective magnetic flux region of a second magnitude that is greater than the first magnitude in the given direction of any one of said plurality of magnetic fields, the effective magnetic flux region being used to displace one of said contact members,

a magnetizable member magnetized by alike poles of the plurality of magnetic fields, to further define the effective region of magnetic flux, and

whereby the effective magnetic flux region allows the first and second support members to be displaced relative to one another in a given direction for a given magnitude, that is greater than the displacement obtainable by the first and second

members using the magnetic flux of any one of the magnet fields, without a change in the electric state of the sensor.

~~The apparatus as recited in claim 24, further comprising a magnetizable member magnetized by alike poles of the plurality of magnetic fields, to further define the effective region of magnetic flux.~~

35. (Currently amended) A magnetically actuated apparatus for opening and closing an electric circuit, the apparatus being adapted for use with first and second support members arranged for displacement relative to one another, wherein the apparatus comprises:

a sensor connected to the electric circuit having an open and a closed state, the sensor being mountable to the first support member and comprising a first contact member arranged for displacement relative to a second contact member,

a magnetic actuator mountable to the second support member, the magnetic actuator comprising a plurality of alike, aligned magnetic fields for selectively displacing one of said contact members, each magnetic field having a pole of opposite polarity and a region of magnetic flux of a first magnitude in a given direction wherein like poles of the plurality of magnetic fields are arranged adjacent to one another to provide an effective magnetic flux region of a second magnitude that is greater than the first magnitude in the given direction of any one of said plurality of magnetic fields, the effective magnetic flux region being used to displace one of said contact members,

wherein the plurality of magnetic fields is defined by a plurality of spaced apart magnets connected to a magnetizable member such that the magnetic flux of each magnet does not overlap, and

whereby the effective magnetic flux region allows the first and second support members to be displaced relative to one another in a given direction for a given magnitude, that is greater than the displacement obtainable by the first and second members using the magnetic flux of any one of the spaced apart magnets, without a change in the electric state of the sensor.

~~The apparatus as recited in claim 34, wherein the plurality of magnetic fields comprise a plurality of magnets connected to the magnetizable member that are spaced apart from each other such that the magnetic flux of each magnet does not overlap:~~

Claim 36 (Cancelled without prejudice)

37. (Previously cancelled)

38. (Previously cancelled)

39. (Previously cancelled)

40. (Previously cancelled)

41. (Previously cancelled)

42. (Previously cancelled)

43. (Currently amended) A magnetically actuated apparatus for opening and closing an electric circuit, the apparatus being adapted for use with first and second supports arranged for displacement relative to one another, wherein the apparatus comprises:

a switch secured to the first support to control the flow of electric current to the electric circuit, the switch including a first contact member arranged for displacement relative to a second contact member to open and close the switch, the first contact member having a switch axis,

a plurality of spaced magnets secured to the second support, each magnet having a pole of opposite polarity wherein like poles of each magnet are arranged with their respective magnetic fluxes contiguous to provide a combined region of magnetic flux that is greater than a region of magnetic flux of each magnet, the combined region of magnetic flux being transverse to the switch axis,

wherein said switch is in an open state when the first contact member is spaced apart from the second contact member,

wherein said switch is in a closed state when the first contact member is in close proximity to the second contact member in the presence of the combined region of magnetic flux, the combined region of magnetic flux biasing the first contact member near the second contact member to permit electricity to flow to the circuit, and

whereby the combined region of the magnetic flux permits the first support and the second support to move relative to one another a greater predetermined distance than obtainable using the region of magnetic flux of each magnet, without a change in the open or closed condition of the switch.

Claims 44-53 (Previously withdrawn)

54. (Previously amended) A method of providing a magnetically actuated apparatus for opening and closing an electric circuit, the apparatus being adapted for use with first and second supports arranged for displacement relative to one another, wherein the method comprises:

providing a sensor connected to the electric circuit having an open and a closed state, the sensor being mountable to the first support member and comprising a first contact member arranged for displacement relative to a second contact member,

providing a magnetic actuator for selectively actuating the sensor, said magnetic actuator being mountable to a second support member that is displaceable relative to the first support member, wherein said magnetic actuator has an elongated magnetic field with like magnetic polarity extending along a lateral side of the magnetic actuator, said elongated magnetic field defining an effective region of magnetic flux, the effective magnetic flux region being used to displace one of said contact members,

whereby the effective magnetic flux region allows the first and second support members to be displaced relative to one another in a given direction for given a magnitude, that is greater than the displacement of the first and second members relative to the magnetic flux of a given magnet, without any change in the electric condition of the sensor.

Claims 55-60 (Cancelled without prejudice)

61. (Previously added) A magnetically actuated apparatus for an electric circuit comprising:

a sensor having a contact that is movable between an open electrical state and a closed electrical state in the presence of magnetic flux, the sensor being mountable to a first support member that is displaceable relative to a second support member, and

a magnetic actuator for actuating the contact, the magnetic actuator being mountable to the second support member and including a plurality of alike magnetic fields aligned adjacent to one another along an elongated lateral side of the actuator, wherein said plurality of alike magnetic fields combine to form an effective region of magnetic flux having a magnitude and direction that is greater than the magnitude and direction of a magnetic field of a given magnet, said effective region of magnetic flux

allowing the first support member to be displaced relative to the second support member a greater distance than obtainable using the given magnetic field, without a change in the electrical state of the contact.

62. (Previously added) A magnetically actuated apparatus for an electric circuit comprising:

a sensor having a contact that is movable between an open electrical state and a closed electrical state in the presence of magnetic flux, the sensor being mountable in a first support member that is displaceable relative to a second support member, and

a magnetic actuator for actuating the contact, the magnetic actuator being mountable to the second support member and including an elongated magnet having a longitudinal axis and an elongated magnetic field of like polarity extending along said longitudinal axis, wherein said elongated magnetic field duplicates overlapping magnetic fields of alike magnets to form an effective region of magnetic flux having a magnitude and direction that is greater than the magnitude and direction of a magnetic field of a given magnet, said effective region of magnetic flux allowing the first support member to be displaced relative to the second support member a greater distance than obtainable using the given magnetic field, without a change in the electrical state of the contact.

63. (Currently amended) A magnetically actuatable apparatus for a control system comprising:

a switch mountable to a first support member, said switch having a contact movable between an open electrical state and a closed electrical state in the presence of magnetic flux, said contact defining an axis, and

a magnetic actuator for actuating the contact, said magnetic actuator being mountable to a second support member that is displaceable relative to the first support member, wherein said magnetic actuator has a lateral side and an elongated magnetic field of like polarity extending along the lateral side to form an effective region of magnetic flux, wherein said elongated field is aligned normal to the axis of the contact and the effective region of magnetic flux has a magnitude and direction that is greater than the magnitude and direction of a magnetic field for a given magnet, wherein the effective region of magnetic flux allows the first support member to be displaced relative to the second support member a magnitude and direction in excess of the magnitude and direction of displacement that is obtainable using the given magnet, without a change in the electrical state of the contact.